

Patent claims

1. Magnetic resonance apparatus with
 - a basic field magnet to generate a basic magnetic field,
 - 5 - at least one eddy current generator, and
 - at least one electrically-conductive structure in which eddy currents can be caused by the eddy current generator, such that Lorentz forces act on the structure in the basic magnetic field,whereby attached to the structure is a force generator that is fashioned and can be controlled such that forces counteracting the Lorentz forces can be generated with the force generator, such that a movement and deformation of the structure is prevented.
- 15 2. Magnetic resonance apparatus according to claim 1, whereby a control of the force generator is connected with a control of the eddy current generator.
- 20 3. Magnetic resonance apparatus according to one of the claims 1 or 2, whereby the eddy current generator comprises at least one coil arrangement to generate a gradient field.
- 25 4. Magnetic resonance apparatus according to claim 3, whereby a control of the coil arrangement comprises a predistortion unit that is connected with the control of the force generator.
- 30 5. Magnetic resonance apparatus according to any of the claims 1 through 4, whereby the structure comprises at least parts of a vacuum reservoir, a cryoshield and/or a coolant reservoir of the basic field magnet.
6. Magnetic resonance apparatus according to any of the claims 1 through 5, whereby the structure comprises at least part of an antenna and/or a radio-frequency shield.

7. Magnetic resonance apparatus according to any of the claims 1 through 6, whereby the force generator comprises electrostrictive elements.

5 8. Magnetic resonance apparatus according to claim 7, whereby the electrostrictive elements are spatially arranged with a density corresponding to a relative density of the Lorentz forces.

9. Magnetic resonance apparatus according to one of the claims 7 or 8,
10 whereby the electrostrictive elements are fashioned like fibers.

10. Magnetic resonance apparatus according to any of the claims 1 through 9, whereby the magnetic resonance apparatus comprises sensors with which a magnetic field that can be generated by the eddy current generator can be detected.

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11. Magnetic resonance apparatus according to claim 10, whereby the sensors are connected with the force generator to scale and/or determine a control of the force generator.

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